

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/518,321	KRAMER, RONALF	
	Examiner	Art Unit	
	BINH K. TIEU	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 12/14/2004.

2.  The allowed claim(s) is/are 14-33.

3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All    b)  Some\*    c)  None    of the:

1.  Certified copies of the priority documents have been received.

2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.

(a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  
1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.

(b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of  
Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)

5.  Notice of Informal Patent Application

2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)

6.  Interview Summary (PTO-413),

Paper No./Mail Date \_\_\_\_\_.

3.  Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 04/06/2005

7.  Examiner's Amendment/Comment

4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

8.  Examiner's Statement of Reasons for Allowance

9.  Other \_\_\_\_\_.

## DETAILED ACTION

### ***Response to Preliminary Amendment***

1. The Applicant's preliminary amendment filed 12/14/2004 was entered. As the results, original claims 1-13 were cancelled as indicated. New claims 14-33 were also added. At this point, claims 14-33 are pending in this Application.

### ***EXAMINER'S AMENDMENT***

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

**Claim 15** (currently amended). The method of qualification of telephone lines according to claim 4 14, wherein each test signal comprises a sinusoidal AC voltage.

**Claim 16** (currently amended). The method of qualification of telephone lines according to claim 4 14, wherein, step a) further comprises employing a phase discriminator to measure any phase shift in the reflection signal.

**Claim 17** (currently amended). The method of qualification of telephone lines according to claim 4 14, wherein step a) further comprises employing a quadrature demodulator to measure any phase shift in the reflection signal.

**Claim 18** (currently amended). The method of qualification of telephone lines according to claim 4 14, wherein the preselected frequency range is substantially from 1.0 kHz to 5.0 kHz.

**Claim 19** (currently amended). The method of qualification of telephone lines according to claim 4 14, wherein the plurality of frequencies comprises a sequence of frequencies having logarithmic intervals between individual frequencies of the sequence of frequencies.

**Claim 20** (currently amended). The method of qualification of telephone lines according to claim 4 14, further comprising, prior to step c), averaging individual phase shit, s in order to smooth them in a profile.

**Claim 21** (currently amended). The method of qualification of telephone lines according to claim 7 20, further comprising, carrying out median formation in the averaging of individual phase shifts.

**Claim 22** (currently amended). The method of qualification of telephone lines according to claim 8 21, further comprising, prior to step c), generating smoothed phase shifts at regular intervals from each other.

**Claim 23** (currently amended). The method of qualification of telephone lines according to claim 4 14, wherein the indication of a suitability state comprises an indication that load coils are detected in the telephone line.

**Claim 25** (currently amended). The method according to claim 11 24, wherein step a) further comprises using an existing test module of the DSL modem to provide, for each of the plurality of frequencies within the preselected frequency range, the test signal into the telephone line.

**Claim 26** (currently amended). The method according to claim 11 24, wherein the DSL modem is at least one of the group consisting of: an ISDN modem, a VDSL modem, an ADSL modem, an SHDSL modem and an SDSL modem.

**Claim 28** (currently amended). The method of qualification of telephone lines according to claim 14 27, wherein the preselected frequency range is substantially from 1.0 kHz to 5.0 kHz.

**Claim 29** (currently amended). The method of qualification of telephone lines according to claim 14 27, wherein the plurality of frequencies comprises a sequence of frequencies having logarithmic intervals between individual frequencies of the sequence of frequencies.

**Claim 30** (currently amended). The method of qualification of telephone lines according to claim 14 27, wherein step c) further comprises averaging subsets of the first derivatives in order to smooth them in a profile

**Claim 31** (currently amended). The method of qualification of telephone lines according to claim 17 30, further comprising, carrying out median formation in the averaging of subsets of the first derivatives.

**Claim 32** (currently amended). The method of qualification of telephone lines according to claim 18 31, wherein step c) further comprises generating smoothed phase shifts at regular intervals from each other.

**Claim 33** (currently amended). The method of qualification of telephone lines according to claim 14 27, wherein the indication of a suitability state comprises an indication that load coils are detected in the telephone line.

**(End of Amendment)**

***Allowable Subject Matter***

3. Claims 14-33 are allowed.

4. The following is an examiner's statement of reasons for allowance:

The closest prior art of record are Faulkner et al. (US. Pat. #: 6,385,297), Rudinsky et al. (US. Pat. #: 6,741,676), Holeva (Pub. No.: US 2004/0062360) and Bauer et al (Pub. No.: US 2004/0028189). These prior art of record fails to clearly teach or fairly suggest, in singular or combination, the features of outputting an indication of a suitability state based on whether at least one mathematical sign change is determined to exist in the second derivative, as substantially described and connected to the new independent claims 14, 24 and 27. Said the mathematical sign change is described in combination of figures 20 and 21 and in the specification, paragraph [0092] of the present application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh K. Tieu whose telephone number is (571) 272-7510 and E-mail address: [BINH.TIEU@USPTO.GOV](mailto:BINH.TIEU@USPTO.GOV).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz, can be reached on (571) 272-7499 and **IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE CALL CUSTOMER SERVICE FOR THE SUBSTITUTIONS OR COPIES.**

Any response to this action should be mailed to:  
Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(571) 273-8300

Hand Carry Deliveries to:

Customer Service Window  
(Randolph Building)  
401 Dulany Street  
Alexandria, VA 22314

In formation regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the FAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**/BINH K. TIEU/**  
Primary Examiner  
Technology Division 2614

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